

IEPA Log No.: **C-0350-16**  
CoE appl. #: **LRC-2016-611**

Public Notice Beginning Date: **March 9, 2017**  
Public Notice Ending Date: **March 30, 2017**

Section 401 of the Federal Water Pollution Control Act  
Amendments of 1972

**Section 401 Water Quality Certification to Discharge into Waters of the State**

**Public Notice/Fact Sheet Issued By:**

Illinois Environmental Protection Agency  
Bureau of Water  
Permit Section  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, Illinois 62794-9276  
217/782-3362

**Name and Address of Discharger:** Michael and Lori Mulhern – 667 Sheridan Road, Winnetka, IL 60093

**Discharge Location:** Near Winnetka in SW 1/4 of Section 16 of Township 42N, Range 13E of the 3rd P.M. in Cook County.

**Name of Receiving Water:** Lake Michigan

**Project Description:** Proposed installation of quarystone breakwater that extends from the shoreline eastward and has two spurs extending northeast and southeast and the construction of revetment along the existing timber retaining wall.

The Illinois Environmental Protection Agency (IEPA) has received an application for a Section 401 water quality certification to discharge into the waters of the state associated with a Section 404 permit application received by the U.S. Army Corps of Engineers. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice. The last day comments will be received will be on the Public Notice period ending date unless a commenter demonstrating the need for additional time requests an extension to this comment period and the request is granted by the IEPA. Interested persons are invited to submit written comments on the project to the IEPA at the above address. Commenters shall provide their names and addresses along with comments on the certification application. Commenters may include a request for public hearing. The certification and notice number(s) must appear on each comment page.

The attached Fact Sheet provides a description of the project and the antidegradation assessment.

The application, Public Notice/Fact Sheet, comments received, and other documents are available for inspection and may be copied at the IEPA at the address shown above between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

If written comments or requests indicate a significant degree of public interest in the certification application, the IEPA may, at its discretion, hold a public hearing. Public notice will be given 30 days before any public hearing. If a Section 401 water quality certification is issued, response to relevant comments will be provided at the time of the certification. For further information, please call Darren Gove at 217/782-3362.

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Michael and Lori Mulhern (“Applicant”) have applied for a 401 Water Quality Certification for impacts associated with the construction of new shoreline protection consisting of a quarystone breakwater, pre-mitigational sand fill, and quarystone revetment at the bluff toe along the Lake Michigan shoreline in Section 16, Township 42 North, Range 13 East, Cook County, Illinois. The project site is located at 667 Sheridan Road, Winnetka, Illinois. The proposed quarystone breakwater beach system would encapsulate the existing deteriorated concrete pier at the property line between 667 and 657 Sheridan road. The new shore-perpendicular quarystone breakwater will extend approximately 95 feet lakeward from the existing steel sheet pile seawall and will have crest elevations of 587 ft. at the landward end and taper to 585 at the lakeward end and would have a 5 ft. crest width throughout its length. The shore-parallel breakwater is approximately 95 ft. in length and has a 7 ft. crest width throughout its length and forms two spurs off the end of the shore-perpendicular breakwater. The northward spur’s toe, the furthest lakeward point of the system, extends out from the timber seawall no more than 125 ft. The north spur breakwater has a crest elevation of 583 ft. tapering from 585 ft. at the lakeward most point of the shore-perpendicular breakwater. The quarystone revetment would be constructed adjacent to the timber seawall at the toe of the bluff at 667 Sheridan Road and will have a crest elevation of approximately 590 ft. The quarystone breakwater structure would be constructed with an armorstone layer consisting of 2-5 ton randomly placed quartzite. The filter layer consisting of 400-1000 lb quarystone would overlie the breakwater core. Approximately 2,752 tons of quarried stone would be placed to construct the breakwater system and approximately 1,607 tons of clean sand would be placed on the beach north and south of the main east-west breakwater structure to mitigate for potential losses of littoral sand trapped by the structure. The construction of the breakwater would permanently fill 0.099 acres of lakebed.

Information used in this review was obtained from the revised permit application dated November 23, 2016.

### **Identification and Characterization of the Affected Water Body.**

Lake Michigan has a 0 cfs of flow during critical 7Q10 low-flow conditions. Lake Michigan is classified as a Lake Michigan Basin Use Water. Lake Michigan is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication Integrating Multiple Taxa in a Biological Stream Rating System, nor is it given an integrity rating in that document. Lake Michigan, Waterbody Segment, QLM-01, is listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for fish consumption use with potential causes given as mercury and polychlorinated biphenyls and aesthetic quality use with potential cause given as phosphorus. Aquatic life, public and food processing water supply, primary recreational contact, and secondary contact uses are fully supported. A Total Maximum Daily Load (TMDL) Report has been prepared and approved by the USEPA for 51 beaches along Illinois’ Lake Michigan shoreline to address Primary Contact Use Recreation impairments due to excess bacteria. The proposed activity occurs within an area identified by the report

“Shoreline Segments in Suburban Cook County, Illinois” May 15, 2013 as a Beach Protection Area subject to that TMDL.

### **Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.**

The pollutant load increases that would occur from this project include some possible increases in total suspended solids. These increases, a normal and unavoidable result of the placement of the quarystone breakwater, may occur in the lake at the point of construction activity. Benthic habitat will also be disturbed in the vicinity of the construction area. The construction of the quarystone breakwater and quarystone revetment along Lake Michigan will fill 0.099 acres of Lake Michigan lakebed. Because the area size of fill does not exceed the Corps of Engineers threshold of 0.1 acres, mitigation is not required to compensate for permanent losses to waters of the U.S. According to the Lake Michigan beach bacteria TMDL, bacteria may be harbored at higher levels within embayment structures designed to catch and retain littoral sand. The small pocket beach such as the one that is proposed at 667 Sheridan Road may exhibit similar characteristics due to its general orientation with respect to lake currents.

### **Fate and Effect of Parameters Proposed for Increased Loading.**

The increase in suspended solids, from the construction of the quarystone breakwater and quarystone revetment and pre-mitigational sand, will be local and temporary. Supplemental information provided by the Applicants regarding strategies to reduce *E. coli* loading as a result of beach modification indicate that the project will comply with the TMDL’s water quality concentration limit load allocation of 126 cfu/100ml. Project improvements may contribute to an overall reduction of *E. coli* loading from the particular segment of Lake Michigan shoreline impacted by this project.

### **Purpose and Social & Economic Benefits of the Proposed Activity.**

The purpose of the proposed quarystone breakwater is to establish a more stable layer of sand to reduce lakebed downcutting. The purpose of the revetment is to protect the bluff from the erosive forces of waves. Lakebed downcutting and shoreline erosion could ultimately reduce the stability of the bluff.

### **Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.**

According to the Applicant the project site has been inspected and options for shoreline protection were determined using desktop coastal engineering, bathymetric surveys of site conditions, and more than 2 decades of observation of the shoreline conditions at this site. Five design options were considered for the project site.

#### Option 1:

Do nothing:

- Leaves currently eroding beach in existing state

- Lakebed will continue to be vulnerable to lakebed downcutting
- Bluff toe will continue to be vulnerable to erosion
- Continued lakebed may cause larger waves and accelerated erosion

Option 2:

Revetment only:

- Provides protection of the bluff only
- Does not prevent erosion of the lakebed which will ultimately destabilize the revetment toe

Option 3:

Encapsulate the Existing Concrete Groin with Stone

- Would not protect the bluff and lakebed at an acceptable level
- High lake level stormwaves would continue to overtop the steel seawall and impact the bluff and timber wall

Option 4:

Quarrystone Breakwater Beach System – Preferred Option

- Would encapsulate existing concrete groin
- Would not extend beyond 125 ft. lakeward of the bluff toe
- Would protect the lakebed and the bluff toe during high lake levels
- Would stabilize the sand on adjacent beaches and allow safe access to Lake Michigan

Option 5:

Disconnected Quarrystone Breakwater

- Provides protection to lakebed, beach and bluff

Functional length of disconnected breakwater would eliminate lake access from property

The construction of the proposed shoreline protection project would follow guidelines set forth by the Agency and the Corps of Engineers. The project complies with IDNR's guideline regarding maximum distance of shoreline protection structures from the toe of the bluff along Lake Michigan. The least intrusive alternative would be to not construct the project. This is not an acceptable alternative given the need to protect the lakebed and the bluff from further erosion and ultimately the residential property adjacent to Lake Michigan. Four design options other than the proposed option were considered to minimize the size and impact of the project. It was determined that the four alternative design options would not adequately protect the shoreline and provide the residents safe and direct access to Lake Michigan.

**Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities**

An EcoCAT endangered species consultation submitted on March 6, 2017 to the Illinois Department of Natural Resources indicated that the following protected resources: Hubbard

Woods Site (INAI site), the Sea Rocket (*Cakile edentula*), and the Seaside Spurge (*Chamaesyce polygonifolia*) may be in the vicinity of the project location. While the IDNR EcoCAT web-based tool did not terminate the consultation because of the near-by presence of Illinois Natural Area Inventory (INAI) sites and endangered plant species, future termination is likely.

### **Agency Conclusion**

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft 401 Water Quality Certification was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will benefit the Lake Michigan shoreline by providing a breakwater system that reduces the impacts of wave energy, protects benthic habitats by reducing lakebed downcutting, prevents the destabilization of the seawall and bluff face which could lead to the loss of land and infrastructure, retains the sandy beach area, and provides lake access for landowners. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.